

REMARKS

Claims 1-19 are pending in this application. Claims 1-6 are withdrawn. Claims 7-11, 15, 16, and 19 are amended. No new subject matter is added. Claims 7-19 remain under consideration in this application. Reconsideration and allowance of claims 7-19 is respectfully requested in light of the amendments above and the remarks below.

In the Specification

A mistake was found at page 5, line 3. It is apparent from FIG. 2 that the thickness 141 is less than the thickness 147. The appropriate correction was made.

In the Claims

Claim 7 was amended to recite, *inter alia*, introducing first oxygen ions at a first energy and at a first dose into the silicon substrate using the sacrificial pattern as a mask, thereby forming a first injected region under the entire active region and forming a first portion of a second injected region adjacent to the first injected region. Amended claim 7 also recites introducing second oxygen ions at a second energy and a second dose into the silicon substrate above the first portion of the second injected region using the sacrificial pattern as a mask, thereby forming a second portion of the second injected region, the second energy and the second dose each being less than the first energy and the first dose, respectively, and wherein the first and second injected regions form a field region that surrounds and isolates the active region.

These amendments are fully supported by the original disclosure at, e.g., FIGS. 2, 3A, 3B, 3C, 3D, and associated written description. For example, FIG. 2 discloses a ***first oxygen ion injected isolation region 142*** and a ***second oxygen ion injected isolation region 144*** (page 4, line 25 to page 5, line 14; emphasis added). FIGS. 3A-3D illustrate that the entire region 142 (FIG. 2) and a portion of the region 144 (FIG. 2) is formed by the ***first ion injected region 120*** that is a result of introducing first oxygen ions (FIG. 3B; page 5, line 28 to page 6, line 13; emphasis added).

Claims 8-11, 15, 16, and 19 are amended for consistency with claim 7. Those amendments are also fully supported by the original disclosure.

Claim Rejections – 35 USC § 103

Claims 7, 9, 11-13, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,333,532 to Davari et al. (hereafter, 'Davari') in view of U.S. Patent No 5,930,643 to Sadana et al. (hereafter, 'Sadana'). The applicants respectfully disagree.

Claim 7, recites, *inter alia*, forming a sacrificial blocking layer that defines and covers an active region; introducing first oxygen ions to form a first injected region *under the entire* active region and to form a first portion of a second injected region adjacent to the first injected region; and introducing second oxygen ions above the first portion of the second injected region to form a second portion of the second injected region (emphasis added).

Only Davari FIG. 3 teaches the feature of introducing first oxygen ions to form a first injected region 38 under the entire area defined by the dielectric mask 36 and a first portion of a second injected region 40 that is adjacent to the first injected region (column 4, lines 8-14). Davari FIGS. 4 and 5 do not show a first injected region formed *under* the entire active region, to the contrary there is no space for an active region between dielectric masks 46, 56 and the buried oxide regions 48, 58.

Furthermore, although it alleged that Davari teaches or suggests introducing second oxygen ions at a second energy and at a second dose, this is not the case. Davari is actually suggesting that the same structure as disclosed by Davari FIGS. 3 and 4 may be achieved by adjusting both the thickness of the mask and the energy of the ions 16 (see, e.g., column 4, lines 18-20; column 4, lines 41-43; and column 4, lines 65-67; emphasis added). Nowhere does Davari suggest introducing second oxygen ions at a second energy and a second dose in conjunction with introducing first oxygen ions at a first energy and a first dose as recited in claim 7.

Sadana is alleged to teach the feature of introducing second oxygen ions at a second energy and a second dose. Even if Sadana is used in this manner, the Davari/Sadana combination would still fail to teach all the features recited in claim 7. In particular, claim 7 recites that the first injected region and the second injected region form a field region that surrounds and isolates the active region. To the contrary, Sadana teaches that all the implanted ions are buried at least 1000 Angstroms deep (column 4, lines 26-30; column 4, lines 61-65). See also Sadana FIGS. 1(a) – 1(d), where all the regions 12, 14, 16, and 18 are completely surrounded by the substrate 10.

Consequently, even if the teachings of Davari FIG. 3 and Sadana were combined, the recited field region that surrounds and isolates the active region is still not taught or suggested. Thus, under MPEP 2143.03, the Davari/Sadana combination fails to establish a *prima facie* case of obviousness for claim 7.

Claims 9, 11-13, 15, and 18 inherently contain the features recited in claim 7. Consequently, the Davari/Sadana combination also fails to teach all the features inherent to

claims 9, 11-13, 15, and 18 and a *prima facie* case of obviousness is not established (MPEP 2143.03).

Claims 8, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davari in view of Sadana as applied to claims 7, 9, 11-13, 15 and 18 above, and further in view of Japanese Patent No. JP 08-167646 to Fujii, et al. (hereafter, 'Fujii'). The applicants respectfully disagree.

Fujii is not alleged to teach the features of claim 7 that Davari and Sadana fail to teach. Claims 8, 16, and 19 inherently contain the features of claim 7. Consequently, the Davari/Sadana/Fujii combination fails to teach all the features inherent to claims 8, 16, and 19 and a *prima facie* case of obviousness is not established (MPEP 2143.03).

Claims 10, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davari in view of Sadana as applied to claims 7, 9, 11-13, 15, and 18 above, and further in view of U.S. Patent No. 6,432,798 to Liu, et al. (hereafter, 'Liu'). The applicants respectfully disagree.

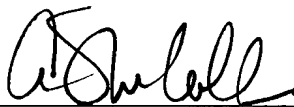
Liu is not alleged to teach the features of claim 7 that Davari and Sadana fail to teach. Claims 10, 14, and 17 inherently contain the features of claim 7. Consequently, the Davari/Sadana/Liu combination fails to teach all the features inherent to claims 10, 14, and 17 and a *prima facie* case of obviousness is not established (MPEP 2143.03).

Conclusion

For the foregoing reasons, reconsideration and allowance of claims 7-19 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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